

ABSTRACT:

For determining the alignment of a substrate (W) with respect to a mask (MA), a substrate alignment mark (P_{10}), having a periodic structure, and an additional alignment mark (P_{11}), having a periodic structure and provided in a resist layer (RL) on top of the substrate, are used. Upon illumination of these two marks, having a period (PE_{10} ; PE_{11})

5 which is considerably smaller than that of a reference mark (M_1 ; M_2), an interference pattern (P_b) is generated, which has a period (PE_b) corresponding to that of the reference mark. By measuring the movement of the interference pattern with respect to the reference mark, the much smaller mutual movement of the fine alignment marks can be measured. In this way, the resolution and accuracy of a conventional alignment device can be increased

10 considerably.

Fig. 5